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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/780,587	02/19/2004	Takashi Watanabe	023971-0377	2484

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FOLEY AND LARDNER LLP
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EXAMINER

PILKINGTON, JAMES

ART UNIT	PAPER NUMBER
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3682

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/12/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/780,587

Applicant(s)

WATANABE ET AL.

Examiner

James Pilkington

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) 12-23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 24-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 2/19/04 & 9/06/06.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Claims 12-23 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 2/21/07.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the obtuse angle (clm 8, no reference character has been provide) and "four pinion gears and two side gears" (clm 25) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for

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consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

4. The disclosure is objected to because of the following informalities: the term "dipping up" is not an adequate description of how the device works as it is clear that the device - - scoops - - lubrication and the term "dipping" should be changed to reflect this.

Appropriate correction is required.

Claim Objections

5. Claim 1 line 4 is objected to because of the following informalities: the limitation "its rotation axis" should be - - a rotation axis - -. Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claim 8 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not

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described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Re clm 8, the specification does not enable for one skilled in the art to make an obtuse angle that forces lubrication into an opening. If the dipping up portion is designed to force lubrication in the outlet opening how does an obtuse angle between the hole and the dipping portion do this? An obtuse angle, it appears to the examiner, would allow the majority if not all of the lubrication to run off the dipping up portion before any lubrication would be forced into the outlet opening. It appears the only angle of the dipping up portion that would force lubrication into the opening is an acute angle. Furthermore, it appears that Figure 4B is showing a perpendicular angle or a slightly acute angle not an obtuse angle.

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 4 and 10-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Clm 4 recites the limitation "a thinner wall structure." It is unclear to the examiner what this wall structure is thinner than as no reference for comparison has been provided. What is the wall structure thinner than?

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Clm 10 recites the limitation "at least one thicker wall portion." It is unclear to the examiner what the wall portion is thicker than as no reference for comparison has been provided. What is the wall portion thicker than?

Clm 10, LAB for "the trailing case in line 4

Clm 10, "the inclined surface defining an acute angle relative to a tangential line of the outer surface at the inclined surface" is unclear. Does the applicant mean the inclined surface defining an acute angle relative to a tangential line of the outer surface of the differential case? Is being examined as such.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. Claims 1-11 and 24-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Porsche, USP 2,102,973.

Re clms 1-11 and 24-29, Porsche discloses a differential for a wheeled motor vehicle comprising:

- A differential gear unit (gearing 6 and 13)
- A differential case/case proper (11) for housing the gear unit, the case being rotatable about a rotation axis (case 11 rotates around an axis corresponding to shaft 1 in Figure 3) above an oil level of lubricating oil (vanes 17 scoop up oil inside housing 15)

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- Wherein the differential case (11) includes:
 - A portion having an oil inlet opening (19)
 - An oil dipping [scooping] up structure (17) wherein the oil dipping up structure:
 - Is shaped to force/push lubricating oil toward the inlet opening (19) and into the case (11, C3/L4-11)
 - Is integral with a major portion of the differential casing (11, the vanes 17 are part of the housing)
 - The dipping up structure (17) comprises a first projection portion having an inclined surface (the vanes 17 are sloped), the inclined surface defining an acute angle relative to a tangential line of the outer surface at a center point of the projected portion (see Figures 1 and 2 where the vanes are shown as acute angles)
 - The case (11) has a thinner wall structure (see Figure 3)
 - The oil inlet opening (19) is positioned at a leading side of the projection portion (17)
 - A second projected portion (other vane 17) formed on the outer surface of the differential case (11) at a diametrically opposed position of the first projected portion, the second portion having the same shape as the first (see Figures 1 and 2)
 - The oil dipping up structure comprises at least one thicker wall portion (the base of the vanes 17 is thicker than the ends of the vanes) provided by

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the differential case (11) at a trailing position of another oil inlet (19), the thicker wall portion having an inclined surface at a leading side thereof with respect to the normal rotation direction, the inclined surface defining an acute angle relative to a tangential line of the outer surface the case (11)

- In which at least a trailing portion of a peripheral edge surface of said another oil inlet (19) opening defines an acute angle relative to a tangential line of the outer surface at a center point of the oil inlet opening (19)
- The case is of a split type having a first half (11) and a second half (11')
- The gear unit is of the type having two or more, including four, pinion gears (13, 13' C2/L 45 discloses 2 or more pinions) and two side gears (16 and 16')

***The examiner notes that for the purpose of determining the angle of the "dipping up structure" in the Porsche references holes 18 are being used. Although holes 18 do not deliver lubrication to the differential gears the holes are in the same axial position as the holes 19 that do deliver the lubrication. Since they are in the same location with respect to the dipping up structure there angles will be the same.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. USP 5,669,844 to Homan also discloses a similar differential lubrication structure.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Pilkington whose telephone number is (571) 272-5052. The examiner can normally be reached on Monday-Friday 8:00AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on (571) 272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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4/10/07

A handwritten signature in black ink, appearing to read 'Richard Ridley', is written over a faint, larger signature.

**RICHARD RIDLEY
SUPERVISORY PATENT EXAMINER**